REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed February 3, 2009. Claims 1-7, 9-12, 14-18, 23-26, 28, and 29 remain pending. In this response, claims 1 and 9 are amended. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Claim Rejections - 35 U.S.C. § 102(e)

Claims 1-7, 9-12, 15-18, 23-26, and 28-29 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by *Yasui et al.* (US 6,271,848, hereinafter *Yasui*). Applicants respectfully traverse the rejection and submit that *Yasui* neither anticipates nor renders obvious claims 1-7, 9-12, 15-18, 23-26, and 28-29. A proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983).

To begin, claim 1, as amended, recites:

> 1. A method for rendering a graphic primitive in a graphics system, the graphic primitive having a plurality of sides that define the edge of the primitive, the method comprising:
>
> receiving, in the graphics system, a signal from an interface, the signal comprising data about a plurality of vertices of the primitive and a variable at a point being processed;
>
> selecting, in the graphics system, an interior point within the graphic primitive;
>
> selecting, in the graphics system, at least two side points located on a side of the graphic primitive;
>
> ***determining, in the graphics system, for each of the at least two side points, a first ratio according to a first channel value for each respective one of the at least two side points and at least two of the vertices;***

determining, in the graphics system, one or more remaining channel values for each of the at least two side points based on the respective first ratio;

determining, in the graphics system, a second ratio according to a first channel value for the interior point and the first channel values of the at least two side points;

determining, in the graphics system, one or more remaining channel values for the interior point according to the second ratio and the corresponding channel values of the at least two side points; and

storing, in the graphics system, one or more of the additional channel values for the interior point.

(*Emphasis added*). Applicants respectfully submit that *Yasui* fails to disclose, teach, or suggest at least the claim features emphasized above.

In this regard, the Office Action (p. 3) alleges that "determining, in the graphics system, for each of the at least two side points, a first ratio according to a first channel value for each respective one of the at least two side points and the primitive vertices data" is disclosed by *Yasui* at col. 7, lines 37-38, "determining division ratio, t1." The Office Action further alleges that "determining, in the graphics system, a second ratio according to a first channel value for the interior point and the first channel values of the at least two side points" is disclosed by *Yasui* at col. 7, lines 60-41, "determining division ratio, t2." Applicants assume that "40-41" was intended instead of "60-41." Applicants respectfully disagree.

Yasui states:

> In FIG. 5, the aforementioned interpolation processes are carried out by an edge interpolator 60 and raster interpolator 62. Here, we shall consider the rendering process of polygon ID 0 in a screen 80, as illustrated in FIG. 6, and we shall look at the processing for a pixel at point c in the polygon. In order to determine the Z value of the pixel corresponding to point c, an internal division ratio t1 at point a on edge 00-01, and an internal division ratio t2 at point b on edge 00-02 are determined. These are edge interpolation calculations. A further internal division ratio t3 is determined at point c which lies between points a and b.

> This is a raster interpolation calculation. Thereupon, the Z value at point c is derived by a linear interpolation method from the Z values at each of the vertices, for example.

(Col. 7, lines 33-46).

Applicants submit that the "internal division ratio t1" of *Yasui* fails to disclose, teach, or suggest "determining … for each of the at least two side points, a first ratio according to a first channel value for each respective one of the at least two side points and at least two of the vertices" as recited in claim 1. First, only one ratio t1 is calculated; t1 is not calculated for each of the points a and b. Second, regarding the calculation of t1, *Yasui* states that it is an "edge interpolation" calculation but fails to explain what precisely is meant by "edge interpolation." *Yasui* fails to disclose, teach, or suggest that t1 is determined according to the first channel value of, for example, point a and the first channel values of vertices 00 and 01.

Additionally, Applicants submit that the "internal division ratio t2" of *Yasui* fails to disclose, teach, or suggest "determining, in the graphics system, a second ratio according to a first channel value for the interior point and the first channel values of the at least two side points" as recited in claim 1. t2 is clearly not calculated according to a first channel value for an ***interior point***. Furthermore, even assuming, *arguendo*, that the "internal division ratio t3" of *Yasui* were to correspond to t2, *Yasui* fails to disclose, teach, or suggest how t3 is calculated. At most, it is described as a "raster interpolation calculation."

Regarding "determining … one or more remaining channel values for each of the at least two side points based on the respective first ratio" and "determining … one or more remaining channel values for the interior point according to the second ratio and

the corresponding channel values of the at least two side points," the Office Action (pp. 3-4) alleges that these features are disclosed by *Yasui* at col. 7, lines 57-65. The cited portion of *Yasui* states:

> Using the internal division ratios t1, t2, t3 determined by the aforementioned edge interpolation and raster interpolation, the interpolator 68 derives texture co-ordinate values, normal vectors and an alpha value for the pixel under processing, point c, by a similar direct interpolation process, from the texture co-ordinates values, normal vectors and alpha values in the vertex data. This interpolation process can be carried out simultaneously with the Z value interpolation.

(Col. 7, lines 57-65). Applicants respectfully submit that nothing in the portions of *Yasui* quoted above shows or suggests that channel values are determined for ***each of the at least two side points***. At most, channel values are being determined for a point c. Even for point c, *Yasui* fails to disclose, teach, or suggest determining the channel values "according to … the corresponding channel values of the at least two side points."

For at least these reasons, Applicants respectfully submit that claim 1 is allowable over *Yasui* and request that the rejection be withdrawn. Insofar as claims 2-7 and 28-29 depend from claim 1, claims 2-7 and 28-29 are allowable as a matter of law because these dependent claims contain all features/elements/steps of their independent claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Next, claim 9, as amended, recites:

> 9. A method of rendering a graphic primitive in a graphics system, the primitive including a plurality of edges, the method comprising:

receiving, in the graphics system, a signal from an interface, the signal comprising data about the plurality of vertices of the primitive and a variable at a point being processed;

determining, in the graphics system, a first ratio for a first point on a first edge of the graphic primitive, the first ratio determined for a first channel value using at least two of the vertices;

deriving, in the graphics system, one or more additional channel values for the first point based on the first ratio;

determining, in the graphics system, a second ratio for a second point on a second edge of the graphic primitive, the second ratio determined for a second channel value using at least two of the vertices;

deriving, in the graphics system, one or more additional channel values for the second point based on the second ratio;

determining, in the graphics system, a third ratio for an interior point based on the channel values for the first point and the channel values for the second point;

determining, in the graphics system, one or more additional channel values for the interior point based on the third ratio; and

storing, in the graphics system, one or more of the additional channel values for the interior point.

(*Emphasis added*). Applicants respectfully submit that *Yasui* fails to disclose, teach, or suggest at least the claim features emphasized above.

Regarding claim 9, the Office Action (p. 5) states that "it is rejected based upon similar rational as above claim 1." Therefore, Applicants reassert the arguments presented in connection with claim 1 to the extent that they apply to claim 9. In addition, the Office Action alleges that *Yasui* "further discloses calculating a third ratio, t3" at col. 7, lines 41-43. The cited portion of *Yasui* states: "These are edge interpolation calculations. A further internal division ratio t3 is determined at point c which lies between points a and b. This is a raster interpolation calculation." (Col. 7, lines 41-43). However, *Yasui* fails to show or suggest that t3 is determined based on "channel values for the first point and the channel values for the second point" as recited in claim 9.

For at least these reasons, Applicants respectfully submit that claim 9 is allowable over *Yasui* and request that the rejection be withdrawn. Insofar as claims 10-

12 and 16-18 depend from claim 9, claims 10-12 and 16-18 are allowable as a matter of law because these dependent claims contain all features/elements/steps of their independent claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Next, claim 15 recites:

> 15. A system for rendering a graphic primitive in a graphics system, the graphic primitive having a plurality of sides, the system comprising:
> a channel value input device configured to determine a channel value for each of a plurality of vertices of the graphic primitive using data received from an interface;
> a point specifier, coupled to the channel value input device, configured to select an interior point within the graphic primitive; and
> an interpolation engine coupled to the point specifier and to the channel value input device, configured to determine a first ratio according to a first channel value for each of at least two side points using data received from the interface, ***determine an interpolated channel value for each of the at least two side points using the first ratio and data received from the interface, determine a second ratio according to a first channel value for the interior point and the first channel values of the at least two side points and further configured to determine a channel value at the selected interior point using the second ratio and interpolation of the channel values for each of the at least two side points***.

(*Emphasis added*). Applicants respectfully submit that *Yasui* fails to disclose, teach, or suggest at least the claim features emphasized above.

Regarding claim 15, the Office Action (p. 6) states that "it is rejected based upon similar rational as above claim 1." Therefore, Applicants reassert the arguments presented in connection with claim 1 to the extent that they apply to claim 15. In addition, the Office Action (p. 6) alleges that the attribute classifying section of *Yasui* corresponds to a point specifier. Applicants respectfully disagree. *Yasui* states:

> The characteristic feature of this embodiment lies in the fact that an attribute classifying section 16 is provided in the geometry converting section 14, or at the output thereof, and this classifies the polygon data generated by the geometry converting section 14 according to the polygon attribute data, and then stores it in the polygon buffer memory 18. When is stored in the polygon buffer memory 18, data is classified such that polygon data having the same attribute data can be extracted. The specific composition of this polygon buffer memory 18 is described below.

(Col. 4, line 60 – col. 5, line 2). Although the Examiner interprets the attribute classifying section as a point specifer, no where does *Yasui* show or suggest that the attribute specifying section is "configured to select an interior point within the graphic primitive" as recited in claim 15. For at least these reasons, Applicants respectfully submit that claim 15 is allowable over *Yasui* and request that the rejection be withdrawn.

Claim 23 recites:

> 23. A method of generating interpolated values for use in rendering a graphic primitive in a graphics system, the method comprising:
> receiving, in the graphics system, from an interface an independent variable X representing the physical portion of a point within the graphic primitive;
> receiving, in the graphics system, vertex values X_0, X_1 of a primitive edge having the point within the graphic primitive with the physical position represented by the independent variable X;
> receiving, in the graphics system, depth values Z_0, Z_1 associated with the vertex values X_0, X_1;
> ***calculating, in the graphics system, a ratio value dependent upon the independent variable at the point X, vertex values X_0, X_1, and depth values Z_0, Z_1***; and
> storing, in the graphics system, the ratio value.

(*Emphasis added*). Applicants respectfully submit that *Yasui* fails to disclose, teach, or suggest at least the claim features emphasized above.

Regarding claim 23, the Office Action (p. 7) states that it is "rejected based upon similar rational as above." Therefore, Applicants reassert the arguments presented above to the extent that they apply to claim 23. Additionally, the Office Action broadly alleges that "calculating ratio values" is disclosed in col. 7 of *Yasui*. However, *Yasui* fails to disclose, teach, or suggest "calculating … a ratio value ***dependent on the independent variable at the point X, vertex values X_0, X_1, and depth values Z_0, Z_1***" as recited in claim 23. As discussed above, *Yasui* does not disclose, teach, or suggest precisely how internal division ratios t1, t2, and t3 are determined. Moreover, nothing in *Yasui* shows or suggests that any of the ratios would be dependent on the five values recited in claim 23.

For at least these reasons, Applicants respectfully submit that claim 23 is allowable over *Yasui* and request that the rejection be withdrawn. Insofar as claims 24-26 depend from claim 23, claims 24-26 are allowable as a matter of law because these dependent claims contain all features/elements/steps of their independent claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Claim 14 stands rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by *Nally et al.* (US 5,598,525, hereinafter *Nally*). Applicants respectfully traverse the rejection.

In this regard, claim 14 recites:

> 14. A system for rendering a graphic primitive, the graphic primitive including a plurality of vertices and edges, the system comprising:
> a plurality of agents configured to receive information from an interface related to the plurality of vertices, a point within the graphic primitive, and generate output signals;

an arbiter coupled to the plurality of agents and configured to receive the output signals and to generate request signals;

an interpolation engine configured to receive the request signals and generate an output ratio signal dependent on at least some of the output signals from the plurality of agents; and

a router coupled to the interpolation engine and configured to transmit the output ratio signal to an input of at least one of the plurality of agents.

(*Emphasis added*). Applicants respectfully submit that *Nally* fails to disclose at least the claim features emphasized above.

To begin, Applicants object to the manner in which the Examiner has rejected Applicants' independent claim 14. In particular, Applicants note that the Examiner has simply block copied Applicants' claim limitations and provided citations merely to reference numbers within *Nally* without any guidance whatsoever as to which specific portions of the reference that the Examiner believes account for Applicants' claim limitations and without any explanation whatsoever as to how those specific portions disclose Applicants' specific claim limitations.

Because of the Examiner's failure to provide such guidance or explanation, Applicants were, and are still, left to guess as to why the Examiner believes that the various elements cited by the Examiner teach or suggest Applicants' claim language. In view of that fact, Applicants have been denied a full opportunity to understand the reasons why Applicants' claims have been rejected and, therefore, have likewise been denied an opportunity to properly respond to the rejections. In other words, Applicants' case has been unfairly prejudiced by the Examiner's actions.

It is stated in MPEP 706.07 that "[t]he Examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal."

In this case, no "clear issue" was ever developed by the Examiner. In view of the Examiner's actions, Applicants submit that the Examiner issue a further non-final Office Action that provides the explanations that had been omitted by the Examiner, or allow all claims.

Regarding the above-emphasized features, the Office Action (p. 8) broadly alleges that they are disclosed by the video backend pipeline 204. Again, Applicants note that the Office Action has provided no explanation as to why the Examiner believes that the video backend pipeline 204 corresponds to all the limitations of "an interpolation engine configured to receive the request signals and generate an output ratio signal dependent on at least some of the output signals from the plurality of agents" as recited in claim 14. In particular, Applicants have not found any discussion in *Nally* corresponding to "generat[ing] an output ratio signal." Accordingly, Applicants respectfully submit that claim 14 is allowable over *Nally* and request that the rejection be withdrawn.

It is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

No fee is believed to be due in connection with this submission. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to Deposit Account No. 20-0778.

Respectfully submitted,

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